# THE ENGRAILED, *ECTROPIS BISTORTATA* (GOEZE) (LEP.: GEOMETRIDAE), HAS BECOME PARTIALLY DOUBLE-BROODED IN NORTH-EAST SCOTLAND

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## Abstract

Records from a light trap in north-east Scotland suggest that *Ectropis bistortata* (Goeze) produced two generations of adults in the years 1999, 2000 and 2002. This interesting information supports the identification, which is disputed by some, of this northern *Ectropis* species as *bistortata* (Goeze).

## Introduction

Many species which are double-brooded in the south are single-brooded in the north of Scotland. In a few cases voltinism is one character used to differentiate pairs of species. For example *Diarsia rubi* (Viewig), the Small Square-spot, is double-brooded in the south, whilst *D. florida* (Schmidt), the Fen Square-spot, is single-brooded. In parts of England where both species occur, the single brooded *D. florida* flies between the two broods of *D. rubi* and flies later at night (Skinner, 1984) (thus maintaining genetic separation). In northern Scotland, the identity of the single-brooded *Diarsia* is not known with certainty and its identity is disputed. It has a prolonged flight time, from mid-June to early September, but is not clearly bivoltine. Many years ago the late Teddy Pelham-Clinton told RMP that in his opinion, if the species is single-brooded it must be called *D. florida*. Some Scottish lepidopterists adhere to this view, others call it *D. rubi*.

*Ectropis bistortata* (Goeze), the Engrailed, and *E. crepuscularia* (D. & S.), the Small Engrailed, are similar in that the Engrailed is double-brooded in the south whilst the Small Engrailed is single-brooded. However, Skinner (1984) follows previous authors, and the widely held current view, in stating that the single-brooded species in northern Britain is *E. bistortata*. This seems to be undisputed, which is strange in view of the difference of opinion over the *Diarsia* spp. The situation is different on Continental Europe where *E. bistortata* is not considered to be a separate species, a view briefly adopted in the British literature (Bradley, 1998) but subsequently reversed (Bradley, 2000). The data presented below suggest that if indeed there are two species, then the view that the Scottish species is *E. bistortata* is probably correct.

The Engrailed moth is local in Kincardineshire and Aberdeenshire, but can be common where it occurs. Casual trapping since 1968 has shown that the moth is found quite frequently in areas of deciduous woodland on middle Deeside (from Crathes and Banchory to Ballater). It occurs more sparingly nearer the coast in the Dyce and Bucksburn area. Until 1998 the flight time was from late March to mid June. From limited experience of the larvae, the foodplants here are oak and birch.

On Donside the species is common around Kemnay and Monymusk. Since 1994 Jon and Marion Bailey have operated a Rothamsted light trap (Woiwod & Harrington, 1994) near Monymusk, in one of the best and oldest oak woods in north-east Scotland (where old oak woods are a rare commodity). This has enabled the flight periods of the Engrailed to be studied in detail over a nine year period (Table 1).

| Year | First brood total | Dates of first and last record | Second brood total | Dates of first and last record |
|---|---|---|---|---|
| 1994 | 49 | 11 Apr - 1 June | 0 | – |
| 1995 | 79 | 30 Mar - 17June | 0 | – |
| 1996 | 57 | 9 Apr - 29 May | 0 | – |
| 1997 | 48 | 18 Mar - 2 May | 0 | – |
| 1998 | 13 | 17 Feb - 19 May | 0 | – |
| 1999 | 31 | 4 Apr - 28 May | 1 | 22 Sep |
| 2000 | 48 | 6 Mar - 20 May | 2 | 2 Aug - 15 Aug |
| 2001 | 119 | 1 Apr - 26 June | 0 | – |
| 2002 | 107 | 27 Mar – 10 June | 5 | 24 Aug - 9 Sep |

**Table 1.** Dates and numbers of *Ectropis bistortata* in RIS trap near Monymusk, 1994 - 2002.

Some interesting facts are apparent. Numbers of the moth per annum range from 13 to 119, and it has been particularly common in the last two seasons. The flight period until 1998 was from late March until early June; with one very early appearance on 17 February 1998 and one late straggler on 17 June 1995. There were no records after this date. First evidence of a second generation occurred in 1999 when one moth was caught on 22 September. Since then a small second brood has occurred in 2000 and in 2002. If British lepidopterists are correct in assuming that we have two species of *Ectropis*, the data presented here suggest that the Scottish population is indeed *E. bistortata*.

## References

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